Instructions and Manual

Rev 1.0

Stockholm 2

Realistic yet Natural Sounding DAC

Mhdt Labs

Audio Products

Thank you for purchasing the Mhdt Labs' Stockholm V2 DAC.

Please take a few moments to read over this instruction manual to get the most out of your unit. The manual describes how to operate the Mhdt Labs' Stockholm V2 DAC and provides some technical background information.

Should you have any further questions or suggestions on how to improve this manual, please feel welcome to get in touch with us.

We hope this investment will bring you many years of outstanding listening enjoyment.

Important Safety Instructions

Please follow these precautions when using this product:

- Read and keep these instructions.
- Heed all warnings.
- Dangerous voltage is inside this apparatus. Opening is only allowed by qualified service personnel.
- Verify line voltage before use.
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptables, and the point where they exit from the apparatus.
- Do not use this apparatus near water.
- Do not use this apparatus outside.
- Do not expose the apparatus to dripping or splashing. Do not place objects filled with liquids (flower vases, drink cans, coffee cups, etc) on the apparatus.

- Unplug the unit from the mains supply before cleaning. The case should normally only be cleaned with a dry, soft, non-fluffy cloth. Do not spray any liquid cleaner onto the cabinet, as this may lead to dangerous shocks.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Avoid exposure to direct sunlight.
- This unit runs slightly warm when operated normally. Operate in a normal ventilated area. If this product will be installed in a rack, make certain there is sufficient air movement within the rack.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

1. Introduction

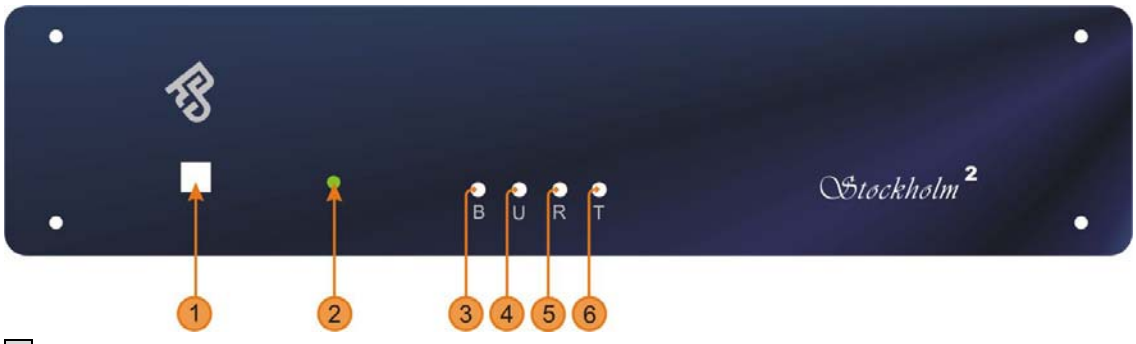
Stockholm V2 DAC is a successor model of our successful Havana series DAC. It is capable of up to 24bits/192kHz digital signal inputs yet remains driving legendary PCM56P R-2R digital to analog output.

Stockholm V2 DAC is a non over-sampling, no digital filter, no op-amp, no feedback structured DAC. This tends to produce most realistic and natural sound.

The USB input section can handle 16-24bits at 44.1, 48, 88.2, 96, 176.4 and 192kHz digital signals. This makes Stockholm V2 DAC a powerful digital music station.

2. Connections and Operation

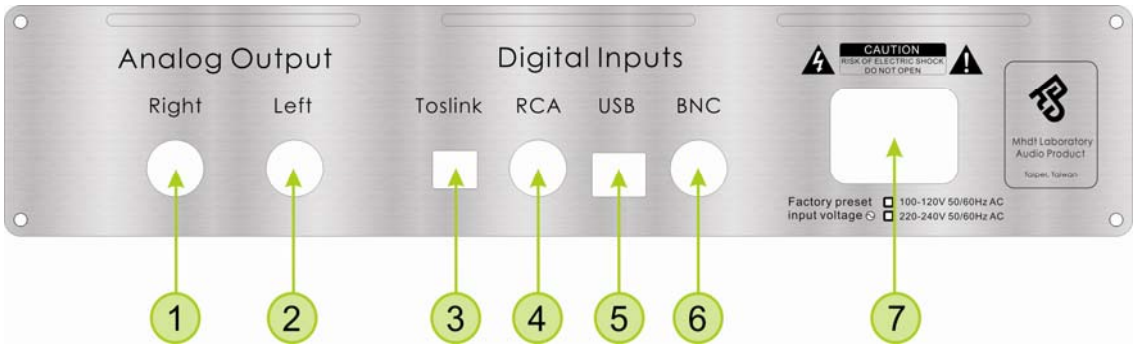
2.1 Front Panel



1 Main power toggle switch
2 Indication Led, lights on when signal is locked
3 Digital input select switch – B, BNC input, SPDIF format
4 Digital input select switch – U, USB input, SPDIF format
5 Digital input select switch – R, RCA input, SPDIF format
6 Digital input select switch – T, Toslink input, SPDIF format

When any of digital inputs is selected, this input is stored after selection, and will remain the last selection after disconnection from mains power.

2.2 Rear Panel Connections



1 Right Channel Analog Output – Connect to Pre-Amplifier or Receiver's line input

2 Left Channel Analog Output – Connect to Pre-Amplifier or Receiver's line input

3 Fiber Optical Digital input – Connect to CD Transport, CDP, DVD or PC's Digital Optic output. Capable of 16-24bits, 32-192kHz SPDIF digital signals.

4 Coaxial Digital Input / RCA - Connect to CD Transport, CDP, DVD or PC's Digital output. Capable of 16-24bits, 32-192kHz SPDIF digital signals.

5 USB Digital Input - Connect to PC's USB Port, please do not connect to USB port on external hub to achieve better sound quality. Capable of 16-24bits at 44.1, 48, 88.2, 96, 176.4 and 192kHz digital signals..

6 Coaxial Digital Input / BNC - Connect to CD Transport, CDP or DVD Digital output. Capable of 16-24bits, 32-192kHz SPDIF digital signals.

7 Main Powercord Inlet – Check the preset voltage indicated below this slot, this can be either 220-240VAC or 100-120 VAC (50/60Hz).

The 4 digital inputs, i.e., 3,4,5,6 are independent to each other, only one among them will be active and is controlled by the tact switches located in front panel.

2.3 Powering up

Before applying power to the Stockholm V2 DAC, ensure that the correct mains voltage is used. This can be either 220-240VAC or 100-120 VAC (50/60Hz). The factory preset voltage is indicated on the rear panel.

After applying mains voltage, a blue led on all inputs will sequentially light up and stay on the last input when powered off.

The filaments of vacuum tube located in the right side of the DAC will also slowly lighting up, it is visible through the transparent acrylic front panel. A slightly click sound of relay can be heard in about 15 seconds after power on and it represents that the DAC is in stand-by mode.

3. Technical specifications

Digital Receiver CS8416
D/A converter PCM56P-J (J grade chips)
Frequency response: 20 Hz to 20 kHz (± 2dB)
Output impedance: 32 ohms
Output level: 3.0 Vrms

USB input 16, 24 bits 44.1 kHz or 48 kHz, 88.2kHz, 96kHz, 176.4kHz and 192 kHz; drivers required
USB inputs are all in asynchronous operation.
All other inputs (SPDIF) 16, 24 bits 32 kHz up to 192 kHz, please check section 5 of this manual for detail.

Dimensions clear (W x D X H) 276 x 150 x 60 mm
Dimensions w/ socket (W x D X H) 295 x 170 x 60 mm
Weight 2 kg

4. Warranty

Warranty of this product is one year after original purchase. During the period of warranty, all repair needed parts, labor and shipment is free. Moreover, we usually replace with a new unit within this warranty period.

This warranty is enforceable only by the original retail purchaser and cannot be transferred or assigned.

This warranty does not cover claims for damage due to abuse, neglect, alteration or attempted repair by unauthorized personnel, and is limited to failures arising during normal use that are due to defects in material or workmanship in the product.

5. USB input driver installation

No driver installation is needed if using w/ Mac and Linux OS, just plug and play

USB2.0 driver installation on Windows OS

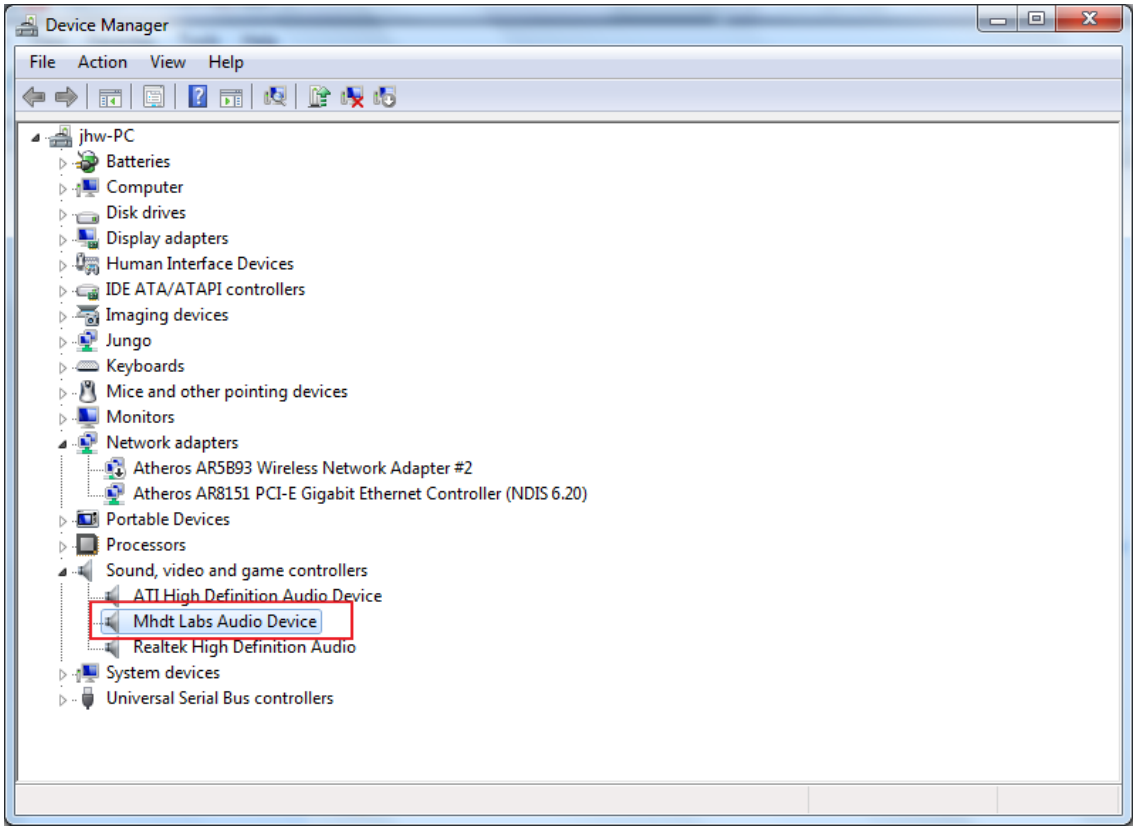
To support 176.4kHz and 192 kHz formats, the Stockholm V2 DAC is operated in USB2.0 full speed condition. Thus, you have to install USB2.0 driver before use USB input.

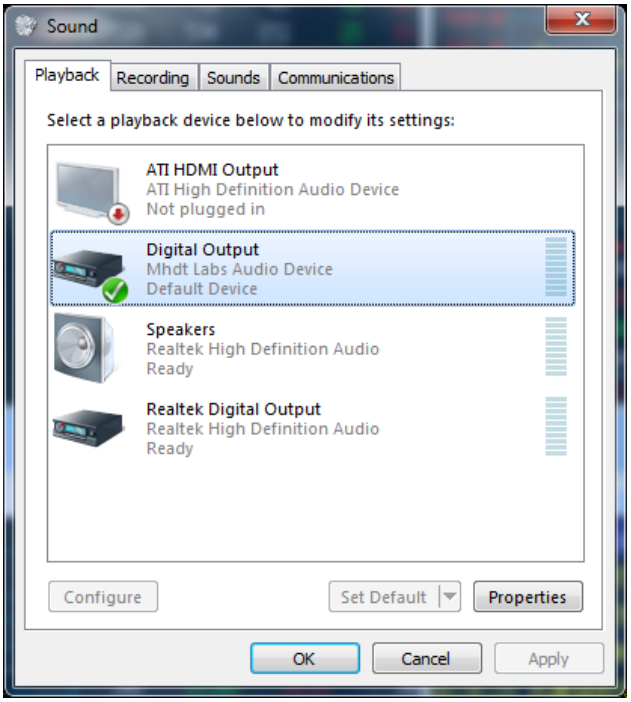
Please download necessary files from our web site:
http://dhost.info/mhdtlab/stockholm2.htm
Or directly download from
http://dhost.info/mhdtlab/CM6631_6631A-1.01(CR).rar

The use and setup of USB2.0 can be referred to our USBridge user manual located in: http://dhost.info/mhdtlab/Usbdriver.htm,

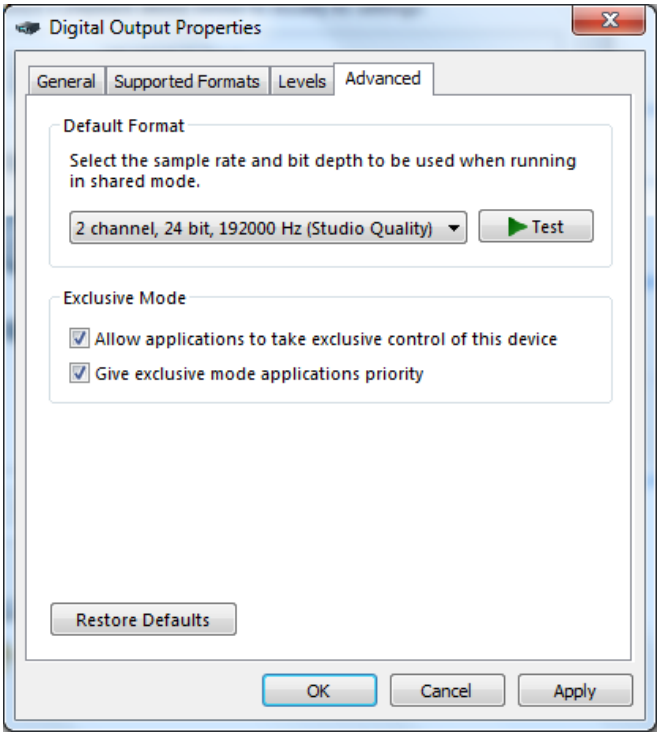
Let's take W7 (32/64) as example:
Installed driver version: **CM6631_6631A-1.01(CR)**

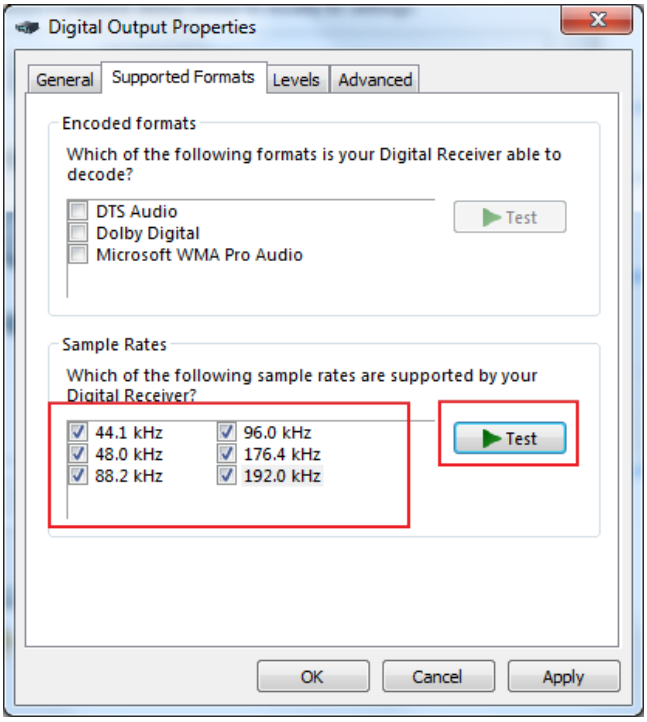
After drivers installed, please check control panel to see if the drivers is properly installed.





Test if the supported formats sounded normally.,

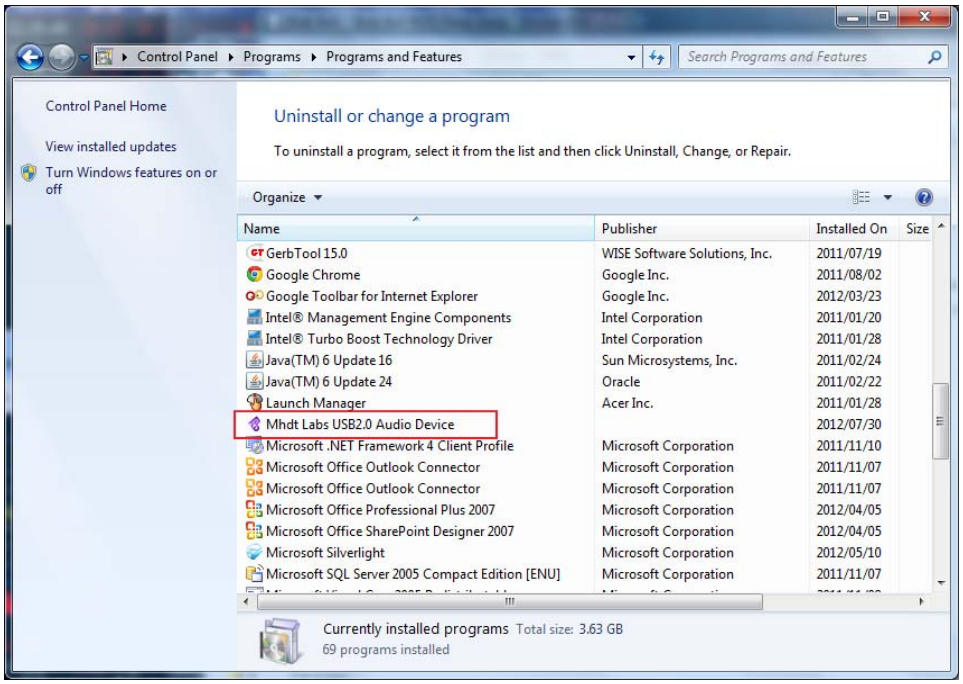




Note:

If you want to install different version of drivers, please uninstall previous drivers before install new driver.

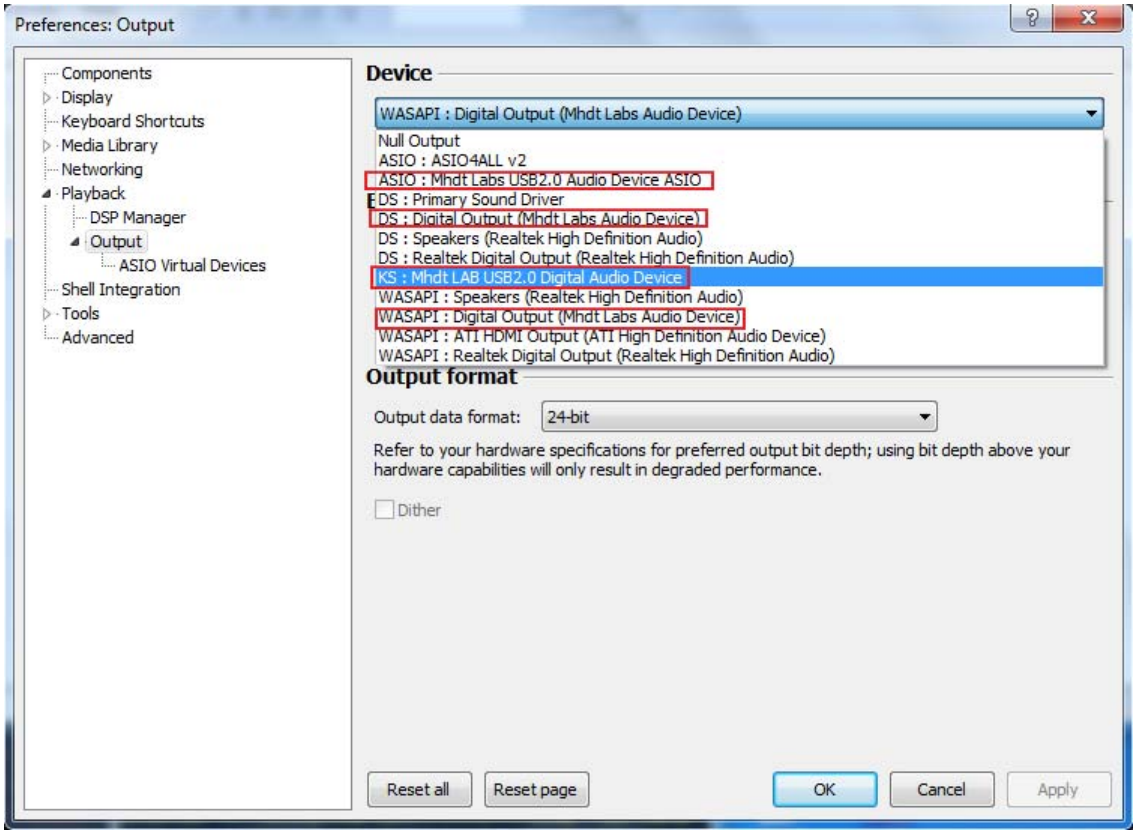
The uninstall is operated in control panel like following:


Control Panel ▸ Programs ▸ Programs and Features
Search Programs and Features
Control Panel Home
View installed updates
Turn Windows features on or off
Uninstall or change a program
To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.
Organize
Name
Publisher
Installed On
Size
GerbTool 15.0 WISE Software Solutions, Inc. 2011/07/19
Google Chrome Google Inc. 2011/08/02
Google Toolbar for Internet Explorer Google Inc. 2012/03/23
Intel® Management Engine Components Intel Corporation 2011/01/20
Intel® Turbo Boost Technology Driver Intel Corporation 2011/01/28
Java(TM) 6 Update 16 Sun Microsystems, Inc. 2011/02/24
Java(TM) 6 Update 24 Oracle 2011/02/22
Launch Manager Acer Inc. 2011/01/28
Mhdt Labs USB2.0 Audio Device 2012/07/30
Microsoft .NET Framework 4 Client Profile Microsoft Corporation 2011/11/10
Microsoft Office Outlook Connector Microsoft Corporation 2011/11/07
Microsoft Office Outlook Connector Microsoft Corporation 2011/11/07
Microsoft Office Professional Plus 2007 Microsoft Corporation 2012/04/05
Microsoft Office SharePoint Designer 2007 Microsoft Corporation 2012/04/05
Microsoft Silverlight Microsoft Corporation 2012/05/10
Microsoft SQL Server 2005 Compact Edition [ENU] Microsoft Corporation 2011/11/07
Currently installed programs Total size: 3.63 GB
69 programs installed

After driver is installed properly, you may try to run media agent to play the USB2.0 audio.

The Stockholm USB2.0 input supports: 16, 24 bits 44.1 kHz, 48 kHz, 88.2kHz, 96kHz, 176.4kHz and 192 kHz formats and can handle Direct Sound (**DS**), Kernel Streaming (**KS**)(will support in newer version of driver) and **WASAPI** and **ASIO** with specific player such as FooBar or Winamp etc.

Take foobar as example.


Preferences: Output
Components
Display
Keyboard Shortcuts
Media Library
Networking
Playback
DSP Manager
Output
ASIO Virtual Devices
Shell Integration
Tools
Advanced
Device
WASAPI : Digital Output (Mhdt Labs Audio Device)
Null Output
ASIO : ASIO4ALL v2
ASIO : Mhdt Labs USB2.0 Audio Device ASIO
DS : Primary Sound Driver
DS : Digital Output (Mhdt Labs Audio Device)
DS : Speakers (Realtek High Definition Audio)
DS : Realtek Digital Output (Realtek High Definition Audio)
KS : Mhdt LAB USB2.0 Digital Audio Device
WASAPI : Speakers (Realtek High Definition Audio)
WASAPI : Digital Output (Mhdt Labs Audio Device)
WASAPI : ATI HDMI Output (ATI High Definition Audio Device)
WASAPI : Realtek Digital Output (Realtek High Definition Audio)
Output format
Output data format:
24-bit
Refer to your hardware specifications for preferred output bit depth; using bit depth above your hardware capabilities will only result in degraded performance.
Dither
Reset all
Reset page
OK
Cancel
Apply

ASIO driver. You can download these drivers from
CM6631_6631A-1.01(CR)**W7**\SoftwareDriver\DLL
W7 is just a demonstration; it can be XP, W8, VISTA

CMUACWOASIO64.dll
CMUACWOASIO.dll
Copy these ASIO drivers to the Components folder of Foobar2000 if you are

using Foobar and restart Foobar. Then, you are ready to use ASIO.

6. Tube, Fuse Replacement

The vacuum tube installed in Stockholm V2 DAC is GE JAN 5670W.

The reason we choose 5670W is that this tube is very reliable, durable, good sounding and easy to find in nowadays' market,

The typical life of GE JAN 5670W is about 6000-8000 hours. If you listen to music by two hours every day, you don't have to care about tube's life for almost 10 years.

The burn in time will takes about 1 day for components and about one month for tube.

Tubes can be used: 5670, 2C51, 396A, 6385, 6386, 6CC42, 6854, 6N3, CV2575, CV4013, CV5894, CV8247, CV2381

Changing tube is by your own risk. You have to remove the top cover plate to remove and insert a new tube. The hex/torx screwdriver needed is hex/2mm or torx/T8x50.

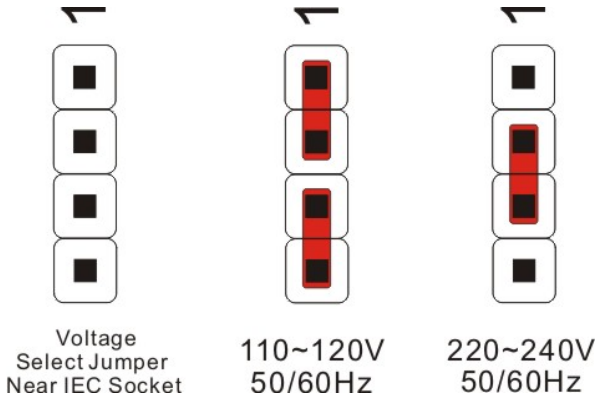
Please consult to experienced person if you are first time to do this.

Fuse spec: 5x20mm 1.0A slow blow

7. Selection of input AC Voltage

The input AC Voltage is presented according to your country and is marked in the rear panel.

In case of traveling to different voltage area:
Find JP3 (Voltage selection jumper) on the PCB beside IEC AC socket.



The DAC is designed to be fully regulated in circuit. So, select 110-120V case can also works well in Japan's 100V.

8. Troubleshooting

In case there is no audio coming out of your system, there are a few things to check:

- Stockholm V2 DAC accepts USB audio signal via USB port. Be sure the input is USB audio signal.
- Stockholm V2 DAC accepts only SPDIF (PCM) format digital signal for the rest of inputs; BNC, RCA and Toslink. Other formats like dts, ac3… are not accepted.
- Are both sides of filaments of the vacuum lighting? If not, try to firm the tube or the tube is dead. Changing a new tube to check the problem remains.
- In case of no sound from USB port, please check if there is any device conflict by device management under control panel.
- Avoid using USB hub in connecting Stockholm V2 DAC. Signal through USB hub may not work properly and also decrease the sound performance.

If none of these suggestions cure the problem, please do not hesitate to contact us.

Latest version of firmware/driver can be downloaded from our website:
http://dhost.info/mhdtlab/